-- IN THE CLAIMS --

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A method for identifying an interacting set of molecules comprising:

A) generating first and second fragments of a fluorescent protein reporter molecule which have a directly fluorescent detectable activity when reconstituted and/or associated;

B) coupling said first fragments of said fluorescent protein reporter molecule to members of a first panel of molecules;

C) coupling said second fragments of said fluorescent protein reporter molecule to members of a second panel of molecules;

D) mixing the products of B) and C);

E) directly testing for fluorescence of said fluorescent protein reporter molecule when reconstituted and/or associated; and

F) identifying the panel members whose interaction resulted in fluorescence of said fluorescent protein reporter molecule and which thus form an interacting set.

2. (previously presented) A method for identifying an interacting set of molecules comprising:

A) identifying a first panel and a second panel of molecules whose mutual interaction is desired to be tested;

B) coupling molecules of said first panel to first fragments of a fluorescent protein reporter molecule;

C) coupling molecules of said second panel to second fragments of said fluorescent protein reporter molecule; wherein said first and second fragments have no activity prior to step (D)

D) mixing the products of B) and C);

E) directly testing for fluorescent activity of said fluorescent protein reporter molecule ; and

F) identifying the panel members whose interaction resulted in said fluorescent activity and which thus form an interacting set.

3. (previously presented) A method of screening multiple panels of molecules against each other to determine the ability of individual panel members to interact with each other, said method comprising:

A) coupling first fragments and second fragments of a fluorescent protein reporter molecule to different panel members; wherein said first and second fragments have no detectable activity;

B) mixing the products of A);

C) testing for said fluorescent protein reporter molecule activity; and

D) identifying the panel members whose interaction results in said fluorescent protein reporter molecule activity and which thus form interacting members.

4. (original) A method according to any of Claims 1-3 where at least two of said panels comprise a library of molecules.

5. (original) A method according to any of Claims 1-3 where at least one of said panels comprises a library of molecules.

6. (original) A method comprising directly or indirectly introducing different interacting sets into separate cell populations and identifying an interacting set that provides its host cells with a growth advantage relative to cells containing a different set.

7. (original) A method comprising directly or indirectly introducing different interacting sets into separate cell populations and identifying an interacting set that provides its host cells with a quantifiable signal that is greater than the signal generated by a different set.

8. (previously presented) A method of preparing an assay system comprising:

A) identifying a first panel of molecules and a second panel of molecules whose mutual interaction is desired to be tested;

B) coupling molecules of said first panel to first fragments of a fluorescent protein reporter molecule; and

C) coupling molecules of said second panel to second fragments of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity.

9. (previously presented) An assay system comprising a first panel of molecules coupled to first fragments of a fluorescent protein reporter molecule and a second panel of molecules coupled to second fragments of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity.

10. (original) A composition comprising at least one compound produced according to step B) of Claim 8 and at least one compound produced according to step C) of Claim 8.

11. (previously presented) A method for identifying interacting molecules comprising:

(A) generating fragments of a fluorescent protein reporter molecule, said fragments having a directly detectable activity when associated;

(B) coupling first fragments of said fluorescent protein reporter molecule to members of a panel of molecules;

(C) coupling a second fragment of said fluorescent protein reporter molecule to a second molecule;

(D) mixing the products of B) and C);

(E) directly testing for said fluorescent protein reporter molecule activity; and

(F) identifying the panel members whose interaction with said second molecule resulted in said fluorescent protein reporter molecule activity.

12. (previously presented) A method for identifying interacting molecules comprising:

(A) identifying a panel of molecules and identifying a second molecule whose interaction with members of said panel is desired to be tested;

(B) coupling members of said panel to first fragments of a fluorescent protein reporter molecule;

(C) coupling the second molecule to a second fragment of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity;

(D) mixing the products of B) and C);

(E) directly testing for said fluorescent protein reporter molecule activity; and

(F) identifying the panel members whose interaction with said second molecule resulted in said fluorescent protein reporter molecule activity and which thus form interacting molecules.

13. (previously presented) A method of screening a first molecule against a panel of molecules to determine the ability of said first molecule to interact with individual members of said panel comprising:

A) coupling a first fragment of a fluorescent protein reporter molecule to said first molecule;

B) coupling second fragments of said fluorescent protein reporter molecule to different members of said panel wherein said first and second fragments have no detectable activity;

C) mixing the products of A) and B);

D) testing for fluorescent activity of said fluorescent protein reporter molecule; and

E) identifying the members of said panel whose interaction with said first molecule results in said fluorescent protein reporter molecule fluorescent activity and which thus interact with said first molecule.

14. (original) A method according to any of Claims 11-13 wherein said panel comprises a library of molecules.

15. (original) A method comprising directly or indirectly introducing different interacting molecules into separate cell populations and identifying those interacting molecules that provide their host cells with a growth advantage relative to cells containing different molecules.

16. (original) A method comprising directly or indirectly introducing different interacting molecules into separate cell populations and identifying those interacting molecules that provides their host cells with a quantifiable signal that is greater than the signal generated by different molecules.

17. (previously presented) A method of preparing an assay system comprising: (A) identifying a panel of molecules whose interactions with a second molecule are desired to be tested; (B) coupling members of said panel to first fragments of a fluorescent protein reporter molecule; and (C) coupling said second molecule to a second fragment of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity.

18. (previously presented) An assay system comprising a panel of molecules coupled to first fragments of a fluorescent protein reporter molecule and a second molecule coupled to a second fragment of said fluorescent protein reporter molecule.

19. (original) A composition comprising at least one compound produced according to step B) of Claim 17 and at least one compound produced according to step C) of Claim 17.

20. (previously presented) A method for identifying interacting molecules comprising: (A) generating fragments of a fluorescent protein reporter molecule which have a directly fluorescent detectable activity when associated; (B) coupling a first fragment of said fluorescent protein reporter molecule to a first molecule; (C) coupling a second fragment of said fluorescent protein reporter molecule to a second molecule; (D) mixing the products of B) and C); and (E) directly testing for fluorescent activity of said fluorescent protein reporter molecule in the absence or presence of one or more chemical or biological compounds.

21. (previously presented) A method for identifying interacting molecules comprising:

A) identifying a first molecule and a second molecule whose interaction is desired to be tested;

B) coupling said first molecule to a first fragment of a fluorescent protein reporter molecule;

C) coupling said second molecule to a second fragment of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity;

D) mixing the products of B) and C);

E) directly testing for fluorescent activity of said fluorescent protein reporter molecule.

22. (previously presented) A method according to any of Claims 1-3, 11-13, and 20-21 wherein fragments are used that have decreased avidity for each other relative to a reference set of fragments.

23. (currently amended) A method according to any of Claims 1-3, 11-13, and 20-21~~2~~ wherein fragments are used that produce a detectable signal that is higher than that of a reference set of fragments.

24. (previously presented) A method of preparing an assay system comprising:

A) identifying a first molecule and a second molecule whose interaction is desired to be tested;

B) coupling said first molecule to a first fragment of a fluorescent protein reporter molecule; and

C) coupling said second molecule to a second fragment of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity.

25. (previously presented) An assay system comprising a first molecule coupled to a first fragment of a fluorescent protein reporter molecule and a second molecule coupled to a second fragment of said fluorescent protein reporter molecule wherein said first and second fragments have no detectable activity.

26. (original) A composition comprising at least one compound produced according to step B) of Claim 24 and at least one compound produced according to step C) of Claim 24.

27. (currently amended) A composition comprising one or more interacting molecules as identified by a method according to any of Claims 1-3, 6-8, 11-13, 15-17, ~~and~~ 20-21, and 24.

28. (currently amended) Cells containing interacting molecules as identified by a method according to any of Claims 1-3, 6-8, 11-13, 15-17, ~~and~~ 20-21, and 24.

29. (currently amended) A method according to any of Claims 1-3,~~5,~~ 8-9, 11-13, 15-18, 20, 21, 24 and 25 wherein said molecules are nucleic acids, peptides, or proteins.

30. (currently amended) A method according to any of Claims 1-3, 8-9, 11-13,~~14,~~ 17-18, 20-21,~~22~~ and 24-25 wherein said fluorescent protein reporter molecule generates an optically detectable signal.

31. (currently amended) A method according to any of Claims 1-3, 8-9, 11-13,~~14,~~ 17-18, 20-21,~~22~~ and 24-25 wherein said reporter molecule generates a fluorescent signal.

32. (currently amended) A method according to any of Claims 1-3, 8- 9, 11-13,~~14,~~ 17-18, 20-21,~~22~~ and 24-25 wherein said fluorescent protein reporter molecule generates a signal that can be quantified within living cells.

33. (currently amended) A method according to any of Claims 1-3, 8-9, 11-13,~~14,~~ 17-18, 20-21,~~22~~ and 24-25 wherein said fluorescent protein reporter molecule generates a signal that can be localized within living cells.

34 - 36 (canceled)

37. (currently amended) A method according to any of Claims 1-3, 8-9, 11-13,~~14,~~ 17-18, 20-21,~~22,~~ and 24-25 wherein the fluorescent protein reporter molecule activity is detected by one or more methods selected from the group consisting of: cell color, fluorescence, optical density, spectroscopy, flow cytometry, microscopy, or image analysis.